REMARKS

In a non-final Office Action mailed July 28, 2004, claims 1-19 are rejected on various grounds including nonstatutory double patenting, 35 U.S.C. §112 (written description, enablement, and definiteness), 35 U.S.C. §102 (anticipation), and 35 U.S.C. §103 (obviousness). Each rejection is discussed separately below. In view of the amendments noted above and the remarks provided below, applicants respectfully request reconsideration of the merits of this patent application.

Nonstatutory double patenting rejection

Claims 1-4, 7, 11, 17, and 19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 16, 21, and 23 of copending U.S. Application No. 10/293,702. The Office Action asserts that the claims of the copending application fall entirely within the scope of the instant claims. Applicants respectfully disagree.

The copending application relates to the promoter region of corticotropin releasing-factor (CRF) receptor 2α and the instant application relates to the promoter region of corticotropin releasing-factor binding protein (CRF-BP). CRF receptor 2α and CRF-BP are two different proteins although they both bind to CRF. The two promoter sequences, i.e. SEQ ID NO:2 in the copending application and SEQ ID NO:1 in the instant application, are quite different. Accordingly, the instant claims are not generic to the claims of the copending application.

Applicants respectfully request that the provisional obviousness-type double patenting rejection be withdrawn.

Rejections under 35 U.S.C. § 112, first paragraph

(1) Written description rejection:

The Office Action rejected claims 1-6 and 8-19 alleging that the written description requirement is not satisfied to the extent that the specification does not disclose all of the functional fragments of SEQ ID NO:1 as encompassed by the claims. Applicants wish to clarify that the Office Action's characterization of SEQ ID NO:1 as the human corticotropin releasing-factor binding protein (CRF-BP) gene is not accurate (page 4 lines 10 and 11 of the Office Action). SEQ ID NO:1 is the promoter region of the gene, not the gene itself.

Therefore, functional fragments recited in the original claims refer to fragments with promoter activities.

Claims 1-4 and 11 have been amended to recite specific fragments of SEQ ID NO:1. The additional fragments recited in the claims are supported by the specification at paragraphs [00010], [00021], and [00022]. In view of the above amendments, the written description requirement for claims 1-6, 11, and 14-16 is now believed to be satisfied.

Claim 17 has been amended to further limit the claim to the extent that at least one of the fragments used in the method comprises nucleotides 3963 to 4917 of SEQ ID NO:1. This amendment is supported by the specification at paragraphs [00010] and [00021] wherein nucleotides 3963 to 4917 of SEQ ID NO:1 and multiple longer fragments are disclosed.

The method of claim 17 has been routinely performed in the art for other promoters. The present invention discloses the promoter region for CRF-BP (SEQ ID NO:1) and a skilled artisan can now practice the method for the CRF-BP promoter by making fragments (e.g., deletion fragments) of the promoter region. In view of the disclosure of SEQ ID NO:1, the sequences of all possible fragments encompassed by the claim are known. There is no ambiguity as to whether a sequence that people use falls within the scope of claim 17. Therefore, the written description requirement for claims 17 and 18 is satisfied.

Claim 19 has been amended to recite a fragment of nucleotides 1-4917 of SEQ ID NO:1 that comprises nucleotides 4868 to 4917 of SEQ ID NO:1. This amendment is supported by the specification at paragraphs [00021] and [00022] wherein a promoter sequence that contains at least nucleotides 4868 to 4917 of SEQ ID NO:1 is disclosed. Applicants are the first to identify the human CRF-BP promoter region and show that cAMP regulates its activity. In view of the disclosure of SEQ ID NO:1, the sequences of all fragments of nucleotides 1-4917 of SEQ ID NO:1 that comprises nucleotides 4868 to 4917 of SEQ ID NO:1 are known. There is no ambiguity as to whether a sequence that people use falls within the scope of claim 19. Therefore, the written description requirement for claim 19 is satisfied.

(2) Enablement rejection:

The Office Action rejected claims 1-6 and 8-19 alleging that the claims are not enabled to the extent that the specification does not disclose any functional fragments of SEQ ID NO:1 as encompassed by the claims. The Office Action asserts that certain fragments of SEQ ID NO:1 are not functional and it requires undue experimentation to determine which

fragments are functional.

Applicants wish to clarify that the Office Action's characterization of SEQ ID NO:1 as the human CRF-BP gene and the Office Action's statement that the specification does not disclose any functional fragments of SEQ ID NO:1 are not accurate (page 6 lines 5, 6, 9, and 10 of the Office Action). SEQ ID NO:1 is the promoter region of the gene, not the gene itself. Functional fragments recited in the original claims therefore refer to fragments with promoter activities and the specification discloses 13 fragments with such activities (paragraphs [00010], [00021], and [00022] and example of the application).

Claim 1-4 and 11 have been amended to recite specific fragments of SEQ ID NO:1 with the "functional fragment" language deleted. In view of the amendments, claims 1-6, 11, and 14-16 are believed to be enabled.

As already discussed above, the method of claim 17 is a routine method in the art. With the disclosure of the promoter region for CRF-BP, a skilled artisan can readily practice the method by making various fragments such as a series of deletion fragments of the promoter region. For the purpose of this method, a skilled artisan understands that no particular fragments are more important than others at least for the first round of testing so long as a series of fragments, preferably covering a wide range of the promoter region, are made and tested according to the method. In this regard, one particular fragment is just as good as any other fragment that is a few nucleotides longer or shorter. The disclosure of the CRF-BP promoter region enables a skilled artisan to practice the method of claim 17 as the method has been practiced routinely by a skilled artisan for so many other promoters. Therefore, the claims 17 and 18 are enabled.

Claim 19 as amended is directed at a method of screening for agents that can affect the regulation of human CRF-BP promoter activity by cAMP through the use of a fragment of nucleotides 1-4917 of SEQ ID NO:1 that comprises nucleotides 4868 to 4917 of SEQ ID NO:1. The Office Action raised the concern that not all of the above fragments may respond to cAMP regulation and it requires undue experimentation to determine which one will respond.

As already discussed above, applicants are the first to show that cAMP regulates the promoter activity for CRF-BP. Applicants tested a total of three fragments encompassed by amended claim 19 and all three responded to cAMP regulation (see Fig. 2 and related text of the application). Based on this evidence and other teachings in the art, applicants strongly believe that all fragments encompassed by claim 19 are responsive to cAMP regulation. The

Office Action has not provided any evidence to the contrary.

Even assuming for the sake of argument that certain fragments encompassed by claim 19 are not operable, this in itself does not render the claim nonenabled. The enablement standard under this circumstance is whether a skilled artisan could determine which embodiments that were conceived, but not yet made, would be inoperative or operative with expenditure of no more effort than is normally required in the art. See MPEP 2164.08(b), citing Atlas Powder Co. v. E.I. du Pont de Nemours & Co., 750 F.2d 1569, 1577, 224 USPQ 409, 414 (Fed. Cir. 1984) (prophetic examples do not make the disclosure nonenabling). For claim 19, the only experiment that a skilled artisan needs to conduct in order to determine if a particular fragment is operative is the routine reporter gene experiment in the absence and presence of cAMP, which is exemplified in the example section of the application. This is clearly no more effort than normally required in the art.

Applicants further note that an invention can be enabled even though some level of experimentation is necessary. In re Angstadt, 537 F. 2d 498 (CCPA, 1976). In determining whether the claims are enabled, the key inquiry is not whether any experimentation is necessary, but rather whether the experimentation is undue. In re Angstadt, 537 F. 2d 498 (CCPA, 1976). If the experimentation is merely routine, a considerable amount of experimentation is permissible. In re Wands, 858 F. 2d 731 (Fed. Cir. 1988). As discussed above, a reporter gene experiment in the absence and presence of cAMP is routine experimentation in the art.

For the above reasons, claim 19 as amended is enabled.

It is not clear from the Office Action as to whether claim 7 is rejected for lack of enablement. The Office Action stated that claims 1-6 and 8-19 are rejected (page 5 lines 3 and 4 of the Office Action) and discussed claim 7 at the last line of page 6 and the first two lines of page 7. Clarification is respectfully requested.

Rejection under 35 U.S.C. § 112, second paragraph

The Office Action rejected claims 7-10 for indefiniteness based on the claim language "a fragment of the 4917 bp upstream of the TSP of human CRF-BP gene (nucleotides 1-4917 of SEQ ID NO:1)" in claim 7.

In response, claim 7 has been amended to clarify that the fragment is a fragment of nucleotides 1-4917 of SEQ ID NO:1 that comprises nucleotides 3963 to 4917 of SEQ ID NO:1. Applicants believe that amended claim 7 is definite and the rejection is overcome.

Rejection under 35 U.S.C. § 102 (b)

The Office Action rejected claims 1-3 for being anticipated by GenBank Accession No. S60697. S60697 discloses a DNA sequence of 1099 nucleotides. Nucleotides 1-947 of S60697 are the same as nucleotides 4055-5001 of SEQ ID NO:1 in the present application. The rest of the S60679 sequence does not find identity with any part of SEQ ID NO:1.

Claim 1 has been amended to recite fragments of SEQ ID NO:1 longer than nucleotides 4055-5001 of SEQ ID NO:1. Amended claim 1 is no longer anticipated by S60697.

Claims 2 and 3 have been amended to limit the isolated nucleic acid to certain exact fragments of SEQ ID NO:1 by using the transitional phrase "consisting of." These exact fragments, although embedded in S60697, are not singled out and specifically disclosed by S60697. Accordingly, amended claims 2 and 3 are no longer anticipated by S60697.

Rejections under 35 U.S.C. § 103 (a)

The Office Action rejected claims 1-3 as being obvious over S60697 and claims 4-6 as being obvious over S60697 in view of Cortright et al.

As discussed above, claims 1 has been amended to recite fragments of SEQ ID NO:1 that contain additional nucleotides not disclosed or suggested by S60697. Accordingly, claim 1 as amended is not obvious over S60697.

Also as discussed above, claims 2 and 3 have been amended to limit the isolated nucleic acid to certain exact fragments of SEQ ID NO:1. These specific fragments were not disclosed or suggested by S60697. Accordingly, claims 2 and 3 as amended are not obvious over S60697.

Claim 4 has been amended to recite fragments of SEQ ID NO:1 with additional nucleotides neither disclosed nor suggested by either S60697, Cortright et al. or a combination of both. Therefore, claims 4-6 are not obvious over S60697 in view of Cortright et al.

Having responded to each ground of rejection imposed by the Office Action, applicants respectfully request reconsideration of the merits of this patent application.

No extension of time is believed to be necessary and no fee is believed to be due in connection with this response. However, if any extension of time is required in this or any

subsequent response, please consider this to be a petition for the appropriate extension and a request to charge the petition fee to the Deposit Account No. 17-0055. No other fee is believed to be due in connection with this response. However, if any fee is due in this or any subsequent response, please charge the fee to the same Deposit Account No. 17-0055.

Respectfully submitted,

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